

Docket No.: YHK-007

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

Application of

Young Sang BAEK, Yu Soong KIM,
Seong Jin KIM and Kyong Soek KIM

Application No.: 09/137,842

Confirm. No.: 3333

Filed: August 21, 1998

For: DISPLAY APPARATUS FOR NOTEBOOK COMPUTER

TRANSMITTAL OF APPEAL BRIEF

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Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Submitted herewith in triplicate is Appellants Appeal Brief in support of the Notice of Appeal filed August 28, 2002. Enclosed is Check No. 8276 for the Appeal Brief fee of \$320.00. Also enclosed is a Petition for Extension of Time for One Month along with Check No. 8281 for the One-Month Extension Fee of \$110.00.

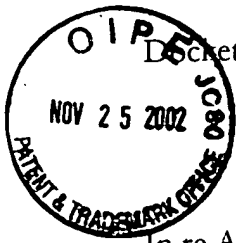
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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Serial No.: 09/137,842

Group Art Unit: 2674

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Examiner: Duc Q. Dinh

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APPEAL BRIEF

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This Appeal Brief is submitted in support of the Notice of Appeal filed August 28, 2002.

REAL PARTY IN INTEREST

The party in interest is the assignee, LG Electronics Inc. The assignment document is recorded at Reel 9584 and Frame 0242.

RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

STATUS OF THE CLAIMS

This is an appeal from the final rejection dated May 1, 2002 of claims 8, 12, and 14-20. Claims 7 and 9 are also pending in the application.

STATUS OF AMENDMENTS

An amendment under 37 C.F.R. § 1.116 is filed with this appeal brief. In this amendment claim 7 has been cancelled, claim 8 has been amended into independent form incorporating the recitations of cancelled claim 7, and claim 9 has been amended to depend from amended claim 8. This amendment under 37 C.F.R. § 1.116 has not been acted upon by the Examiner. A correct copy of appealed claims 8, 12, and 14-20, including all entered amendments thereto, appears in the attached Appendix.

SUMMARY OF THE INVENTION

Embodiments of the present invention relate to a display apparatus for a notebook computer. [Title] In embodiments a display is pivotably attached to a notebook computer. [Page 20, lines 13-15] The notebook computer may include a driving circuit (i.e. a graphics control board and a panel printed circuit board) that drive drivers of the display, the panel printed circuit board being also referred as a module control board and having a timing control board and a backlight driver. [Page 20, lines 17-21] The display includes the drivers for driving the display. [Page 20, lines 26-29]. A flexible printed circuit film connects the driving circuit in

the notebook computer with the drivers in the display. [Page 20, lines 28-32]

In embodiments, since the entire driving circuit is included in the notebook computer, a flexible printed circuit film does not exist between a graphics control board and a timing control board. [Page 21, lines 11-14] Accordingly, because the timing control board is not connected to the graphic control board by a flexible printed circuit film, clock signals will not be affected by noise. [Page 21, lines 11-14] By the clock signals not being affected by noise, an image displayed on a display will not be distorted. [Page 21, lines 14-16] Further, because a timing control board and a backlight unit driver can be located in the panel printed circuit board of the main housing, rather than located in the display, the overall circuit structure may be simplified and the display area may be enlarged. [Page 21, lines 15-25]

ISSUES

1. Whether the Examiner erred in the rejection of claim 8 under 35 U.S.C. § 103(a) by not establishing a *prima facie* case of obviousness because the applied prior art does not disclose a flexible printed circuit film that connects a timing control unit with drivers mounted on a display panel and a module control board having a timing control unit for driving drivers in a panel module and a backlight unit driver for driving a backlight unit in the panel module.
2. Whether the Examiner erred in the rejection of claims 12 and 14-20 under 35

U.S.C. § 103(a) by not establishing a *prima facie* case of obviousness because the applied prior art does not disclose a flexible printed circuit film that connects drivers and a driving circuit and a driving circuit for driving drivers in a display module and a backlight unit.

GROUPING OF THE CLAIMS

Appealed claim 8 forms a single group and stands or falls independently. Appealed claims 12 and 14-20 forms a single group and stand or fall together.

THE ARGUMENT

Issue 1. **A *prima facie* case of obviousness was not established in the rejection of claim 8 under 35 U.S.C. § 103(a) as being unpatentable over "Applicants Admitted Prior Art" (AAPA) in view of Moriconi (U.S. Patent No. 5,546,098), in further view of Godfrey et al. (U.S. Patent No. 5,736,973).**

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Second, there must be some suggestion or motivation in the references themselves to modify the reference or to combine reference teachings. Third, there must be a reasonable expectation of success for the modification or combination of references.

The teaching or suggestion to make the modification or combination of prior art and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). There must be particular findings as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge to the claimed invention to combine or modify references. *In re Kotzab*, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000).

Conclusory statements cannot be relied up for particular combinations of prior art and specific claims. *In re Lee*, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

Claim 8 recites a display apparatus comprising a panel module and a module control board. The panel module includes drivers mounted on a display panel that drives a pixel matrix. The module control board has a timing control unit for driving the drivers and a back light unit driver for driving the back light unit of the panel module. The apparatus further comprises a first connecting device that connects the timing control unit with the drivers. The first connecting device includes a flexible printed circuit film.

The disclosure in the present application in the "Description of the Prior Art" section of the present application does not disclose a first connecting device, including a flexible printed circuit film, connecting a timing control unit and drivers. Although this disclosure does show flexible printed circuit film 11 and 17, neither of these films connect a timing control unit to a driver. Further, this disclosure does not show a module control board having a timing control unit for driving drivers and a back light unit driver for driving a back light unit of a panel

module. On page 2 of the Final Office action mailed May 1, 2002, it is stated that "...AAPA...fails to disclose that the timing control unit and the backlight driver [is] integrated into a printed circuit board."

Moriconi relates to a removable computer display interface. Godfrey et al. relates to an integrated backlight display system for a personal digital system. However, unlike the recitations of claim 8, neither Moriconi nor Godfrey et al. disclose a first connecting device, including a flexible printed circuit film, that connects a timing control unit with drivers. Further, these disclosures do not show a module control board having a timing control unit for driving drivers and a back light unit driver for driving a back light unit of a panel module.

Godfrey et al. discloses in Figure 3 and the accompanying description in column 4, lines 65-67 a "... backlight driver circuit, generally referenced at 22, is constructed on a conventional printed circuit board [PCB] 24." Additionally, Figure 6 and the accompanying description in column 6 describe backlight driver circuit 22. It is disclosed that backlight circuit 22 includes an oscillator. In column 6, lines 50-53, is it disclosed that "[a]n oscillator 64 supplies switching signals 66 on conductors 68 and 70 to the bridge driver 56 to control the frequency of the AC waveform 58 applied to the electroluminescent film 36." However, the oscillator is not a timing control unit for driving drivers, as recited in claim 8.

Accordingly, neither AAPA, Moriconi, nor Godfrey et al. disclose, alone or in combination, a first connecting device, including a flexible printed circuit film, that connects a timing control unit and drivers. Further, neither AAPA, Moriconi, nor Godfrey et al. disclose,

alone or in combination, a module control board having a timing control unit for driving the drivers and a back light unit driver for driving the back light unit of the panel module. At least for these reasons, a *prima facie* case of obviousness has not been established in the rejection of claim 8 under 35 U.S.C. § 103(a).

The Appellants respectfully submit that neither the disclosures of Godfrey et al. nor Moriconi disclose the requisite suggestion or motivation to be modified or combined to teach or suggest the recitations of claim 8. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). On page 4, lines 4-5 of the Final Office Action the Examiner merely states that "...AAPA discloses that the FPC 21 is a flexible printed film." However, the Examiner offers no motivational statements disclosed in the cited prior art references that would have motivated one with no knowledge to the claimed invention to combine or modify references to teach a flexible printed circuit film connecting a timing control unit and drivers. *In re Kotzab*, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000). At least for these reason, a *prima facie* case of obviousness has not been established in the rejection of claim 8 under 35 U.S.C. § 103(a).

Issue 2. **A *prima facie* case of obviousness was not established in the rejection of claims 12 and 14-20 under 35 U.S.C. § 103(a) as being unpatentable over "Applicants Admitted Prior Art" (AAPA) in view of Moriconi (U.S. Patent No. 5,546,098), in further view of Godfrey et al. (U.S. Patent No. 5,736,973).**

Claims 12 and 14-20 recite a notebook computer comprising a display module and a body module. The display module comprises drivers that drive a display device. The body module comprises a main printed circuit board and a driving circuit mounted on the main printed circuit board that drives the drivers in the display module. The driving circuit is a module control board. The module control board also drives a back light unit. That is, the module control board drives the back light unit as well as the drivers in the display module. The notebook computer comprises a connecting circuit comprising a flexible printed circuit film that connects the drivers and the driving circuit.

The disclosure in the present application in the "Description of the Prior Art" section of the present application does not disclose a connecting circuit comprising a flexible printed circuit film that connects drivers and a driving circuit. Although this disclosure does show flexible printed circuit film 11 and 17, neither of these films connect a driving circuit to drivers. Further, this disclosure does not show a module control board that drives drivers in the display module and a back light unit.

Moriconi relates to a removable computer display interface. Godfrey et al. relates to an integrated backlight display system for a personal digital system. However, unlike the recitations of claims 12 and 14-20, neither Moriconi nor Godfrey et al. disclose a flexible printed circuit film that connects drivers and a driving circuit. Further, neither Moriconi nor Godfrey et al. disclose a module control board that drives drivers in the display module and a back light unit.

Accordingly, neither AAPA, Moriconi, nor Godfrey et al. disclose, alone or in combination, a flexible printed circuit film that connects drivers and a driving circuit. Further, neither AAPA, Moriconi, nor Godfrey et al. disclose, alone or in combination, a module control board that drives drivers in the display module and a back light unit. At least for these reason, a *prima facie* case of obviousness has not been established in the rejection of claims 12 and 14-20 under 35 U.S.C. § 103(a).

The Appellants respectfully submit that neither the disclosures of Godfrey et al. nor Moriconi disclose the requisite suggestion or motivation for modification or combination to teach or suggest the recitations of claims 12 and 14-20. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Examiner offers no motivational statements related to the recitation of a flexible printed circuit film in claims 12 and 14-20. At least for these reason, a *prima facie* case of obviousness has not been established in the rejection of claims 12 and 14-20 under 35 U.S.C. § 103(a).

CONCLUSION

In accordance with the arguments set forth above, the Appellants respectfully request the honorable Board of Appeals and Interferences overturn the rejections of claims 8, 12, and 14-20 erroneously made by the Examiner under 35 U.S.C. § 103(a). The Appellants further respectfully request the honorable Board of Appeals and Interferences of the U.S. Patent and Trademark Office to enter the amendment filed with this appeal brief under 37 C.F.R. § 1.116. This amendment merely cancels claim 7, amends claims 8 into independent form to incorporate all of the recitations of cancelled claim 7 into claim 8, and amend claim 9 to depend from claim 8.

Respectfully submitted,
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APPENDIX

8. The display apparatus as claimed in claim 7, wherein said first connecting device includes a flexible printed circuit film.

12. A notebook computer, comprising:

- a display module, wherein the display module comprises,
 - a display device that displays data, and
 - drivers mounted in the display module that drive the display device;
- a body module, wherein the body module comprises,
 - a main printed circuit board that processes the data for the display device,

and

- a driving circuit mounted on the main printed circuit board that drives the drivers in the display module; and
- a connecting circuit that connects the drivers and a back light unit with the driving circuit, wherein said connecting circuit comprises,
 - a flexible printed circuit film that connects between the drivers and the driving circuit, and
 - a conductive line that connects between the driving circuit and the back light unit, wherein the display module further comprises the back light unit that irradiates the

display device, and wherein the driving circuit is a module control board mounted on the main printed circuit board, and wherein the module control board drives the back light unit.

14. The notebook computer of claim 12, wherein the conductive line connects the back light unit with the module control board.

15. The notebook computer of claim 12, wherein the driving circuit includes a timing control circuit and forms a package.

16. The notebook computer of claim 15, wherein the driving circuit comprises:
a circuit board mounting circuit elements;
a molding material that packages the circuit board with the circuit elements; and
a plurality of leads coupled to the circuit board through the molding material..

17. The notebook computer of claim 12, wherein the driving circuit is formed in a circuit card.

18. The notebook computer of claim 17, wherein the driving circuit comprises:
a card;
a plurality of circuit elements mounted on the card; and

a plurality of slot contacts being formed on the card.

19. The notebook computer of claim 12, wherein the body module comprises a data entry device, wherein the data entry device is a keyboard, wherein the display module is rotatably coupled to the body module to move between at least an open position and a closed position, wherein the display device comprises a pixel matrix having a plurality of pixel cells that use row
5 and column lines for selection, and wherein the drivers comprise a plurality of row drivers and a plurality of column drivers.

20. The notebook computer of claim 12, wherein the display module has a reduced thickness.

BRIEF